

I claim as my invention:

1           1.    A sealable fastener for insertion into a fastener opening  
2   in a receiving structure, the sealable fastener comprising:

3           a fastener shank comprising a shank longitudinal axis and a  
4   shank first end terminating at and integrally joined to a fastener  
5   head having a fastener first end wall and a shank second end  
6   terminating at a fastener second end wall, a shank side wall  
7   between said fastener head and said fastener second end wall and  
8   having a circumferential channel in said shank side wall extending  
9   to said fastener head and opening radially outward from said shank  
10   longitudinal axis, said shank side wall additionally having a  
11   fastener thread between said circumferential channel and said  
12   fastener second end wall;

13          and a sealant delivery passageway having a passageway entry  
14   port in said fastener head and a passageway exit port opening into  
15   said circumferential channel and extending from said passageway  
16   entry port to said passageway exit port;

17          such that a flowable sealant is injectable into said delivery  
18   passageway entry port, such that the sealant flows through said  
19   sealant delivery passageway and exits through said delivery  
20   passageway exit port and flows into and around said circumferential  
21   channel, creating a circumferential seal between said fastener  
22   shank and the fastener opening in the receiving structure.

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1           2.    The sealable fastener of claim 1, wherein said shank side  
2 wall comprises a plurality of circumferential channels.

1           3.    The sealable fastener of claim 1, wherein said fastener  
2 is one of a bolt and a screw.

1           4.    The sealable fastener of claim 1, wherein said sealant  
2 d livery passageway is a radial notch in said fastener head.

5.  
1           5.    A sealable fastener for insertion into a fastener opening  
2   in a receiving structure, the sealable fastener comprising:

3           a fastener shank comprising a shank longitudinal axis and a  
4   shank first end terminating at and integrally joined to a fastener  
5   head having a fastener first end wall and a shank second end  
6   terminating at a fastener second end wall, a shank side wall  
7   between said fastener head and said fastener second end wall, said  
8   shank side wall comprising a first circumferential channel in said  
9   shank side wall extending to said fastener head and opening  
10   radially outward from said shank longitudinal axis, a fastener  
11   thread between said circumferential channel and said fastener  
12   second end wall, and a second circumferential channel in said shank  
13   side wall between said first circumferential channel and said  
14   fastener second end wall;

15          and a sealant delivery passageway having a first passageway  
16   entry port in said fastener head and having a first passageway exit  
17   port opening into said first circumferential channel and a second  
18   passageway exit port opening into said second circumferential  
19   channel and extending from said first passageway entry port through  
20   said fastener head to said first passageway exit port and to said  
21   second passageway exit port;

22          such that flowable sealant injected into said passageway entry  
23   port flows through said sealant delivery passageway, out of said  
24   first passageway exit port and into and around said first  
25   circumferential channel and out of said second passageway exit port  
26   and into and around said second circumferential channel, creating

1 circumferential seals between said fastener shank and the fastener  
2 opening in the receiving structure.

1 6. The sealable fastener of claim 5, wherein said sealant  
2 delivery passageway is a radial notch in said fastener head.

1           7.    A sealable fastener and fastener receiving structure,  
2 comprising:

3           a fastener receiving structure having a fastener opening with  
4 a fastener opening longitudinal axis and a fastener opening  
5 interior surface substantially parallel with said fastener opening  
6 longitudinal axis;

7           a sealable fastener comprising a fastener shank extending  
8 inside said fastener opening and having a shank longitudinal axis  
9 substantially parallel with said fastener opening longitudinal axis  
10 and a shank first end terminating at and integrally joined to a  
11 fastener head having a fastener first end wall and a shank second  
12 end terminating at a fastener second end wall, a shank side wall  
13 substantially parallel with said fastener opening longitudinal axis  
14 and extending between said fastener head and said fastener second  
15 end wall and having a circumferential channel in said shank side  
16 wall extending to said fastener head and opening radially outward  
17 from said shank longitudinal axis, said shank side wall  
18 additionally having a fastener thread between said circumferential  
19 channel and said fastener second end wall;

20           and a sealant delivery passageway having a passageway entry  
21 port in said fastener head and a passageway exit port opening into  
22 said circumferential channel and extending from said passageway  
23 entry port to said passageway exit port;

24           such that a flowable sealant is injectable into said delivery  
25 passageway entry port, such that the sealant flows through said  
26 sealant delivery passageway and exits through said delivery

1 passageway exit port and flows into and around said circumferential  
2 chann l and into contact with fastener opening interior surface,  
3 creating a circumferential seal between said fastener shank and  
4 said fastener opening interior surface.

1 8. The sealable fastener and fastener receiving structure of  
2 claim 7, wherein said sealant delivery passageway is a radial notch  
3 in said fastener head.

9. A method of securing a sealable fastener into a fastener receiving structure comprising a fastener opening with a fastener opening longitudinal axis and a fastener opening interior surface substantially parallel with said fastener opening longitudinal axis; said sealable fastener comprising a fastener shank having a shank longitudinal axis substantially parallel with said fastener opening longitudinal axis and a shank first end terminating at and integrally joined to a fastener head having a fastener first end wall and a shank second end terminating at a fastener second end wall, a shank side wall substantially parallel with said fastener opening longitudinal axis and extending between said fastener head and said fastener second end wall and having a circumferential channel in said shank side wall extending to said fastener head and opening radially outward from said shank longitudinal axis, said shank side wall additionally having a fastener thread between said circumferential channel and said fastener second end wall; and a sealant delivery passageway having a passageway entry port in said fastener head and a passageway exit port opening into said circumferential channel and extending from said passageway entry port to said passageway exit port; said method comprising the steps of:

inserting said shank second end into said fastener opening;

rotating said fastener such that said fastener shank advances into said fastener opening until said fastener head abuts said fastener receiving structure;

injecting a flowable sealant into said delivery passageway

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1 entry port;  
2 and driving said sealant through said sealant delivery  
3 passageway and through said delivery passageway exit port and into  
4 and around said circumferential channel and into circumferential  
5 sealing contact with said fastener opening interior surface.